
Arboreta and Botanic Gardens

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New insights balance work for summer interns

Books closed for the summer but the learning went on for the 13 students participating in the Department of Arboreta and Botanic Garden's summer internship program. Theories learned in class were applied to the work they did to help maintain the beauty of the gardens.

The Los Angeles State and County Arboretum had six interns who, working with senior gardener Dale Witt, performed a wide variety of tasks, some not taught in class.

Alouise Wright is an ornamental horticulture major at Cal Poly San Luis Obispo. She did everything from weeding, seed collecting, mapping and propagating to bricklaying. Alouise's favorite project was working with the roses. She learned to pin and prune roses properly and

provide the special attention needed by different hybrids.

"Working with other gardeners helped me to learn different methods of gardening," she said. She added that she got a lot of hands-on experience and found that the general knowledge from school was applied in detail at the Arboretum.

Mike Stowe will also attend Cal Poly San Luis Obispo this fall as a natural resource management major. "I gained a lot of experience. I'll have an advantage over the other students since I've already done what we're going to study."

Jo Legg graduated from Mt. San Antonio College with an Associate of Arts degree in horticultural science with plans to continue her education. She honed skills learned in school and



Senior gardener Dale Witt (far left) supervises interns planting shrubs in the African Section.

Students are (from left) Angela Tong, Alouise Wright, Ron Dyer and Michael Stowe.

found that they applied to her work, especially bricklaying, since she was required to take construction as part of her major.

Angela Tong, a plant science major from UC Davis, had the same experience. "My work did coincide with school, but school is more important and the internship helped me to appreciate it better because of all the hard work I've done."

Other students working for the summer were Kevin Carpenter, UC Irvine, and Ron Dyer, Cal Poly San Luis Obispo.

Five students at Descanso Gardens also performed many tasks that weren't included in text books. As Henry Bante, a horticulture major at Fullerton Community College, put it, "our work was a call above duty."

Besides planting, landscaping and overall maintenance, the students were involved in the lake renovation project at the garden. They also waded waist-deep in the Arboretum's lake gathering tule reeds for Descanso's new lake-shore and waterfall which they helped construct.

Gary Salata, who attends UC San Diego, had no horticultural experience before starting his internship. "The whole garden in general made an impact on me. I can see the difference in the



Interns Joaquin Contreras and Wendy Ablon pause during pruning at Virginia Robinson Gardens.



Painting directional sign are Descanso Gardens interns (from left) Natalie DeGard, Henry

Bante, Stephanie Franklin, and Gary Salata.

garden after the work is done," he said.

Stephanie Franklin, who was a volunteer before entering the internship program, has an appreciation of plants and a new perspective on life now that she knows how a garden is run.

Adam Graham, an ornamental horticulture major at Cal Poly San Luis Obispo added, "We aren't just gardeners. We learned not only botany but administration as well." He is almost finished with school and found that the work was very much related to his major. "Working here is a living school."

Also at Descanso was Natalie De Garder, an environmental science major at UC Davis. Like the other students, she also learned a lot about plants and enjoyed working with everyone at Descanso.

Virginia Robinson Gardens had two summer interns, both on detours in their lives. Wendy Ablon has a degree in psychology from UCLA while Joaquin Contreras studied at West Valley Occupational Center.

Wendy agreed that working in a garden is a long way from psychology, but after a year spent

exploring other interests such as ikebana flower design, she may return to school for a degree in landscape architecture.

Her duties included planting and maintaining the garden along with extensive training in pruning, grooming and deadheading roses. She learned a lot, she said, but "I won't know what I've really learned until I step back and take a look."

When Joaquin was working at the Arboretum he asked if there were any openings in the garden and was referred to Robinson Gardens. Besides general garden tasks, he has gone on field trips and learned how to turn waste water into soil amendments. "I learn something new all the time," he said.

Knowledge gained by all the interns about the ins and outs of running a garden is an invaluable tool. How they use the information may change their lives. As Mike Stowe, an intern for the Arboretum said, "I want to use this knowledge to help preserve the environment, help people and make the planet a better place for the next generation."

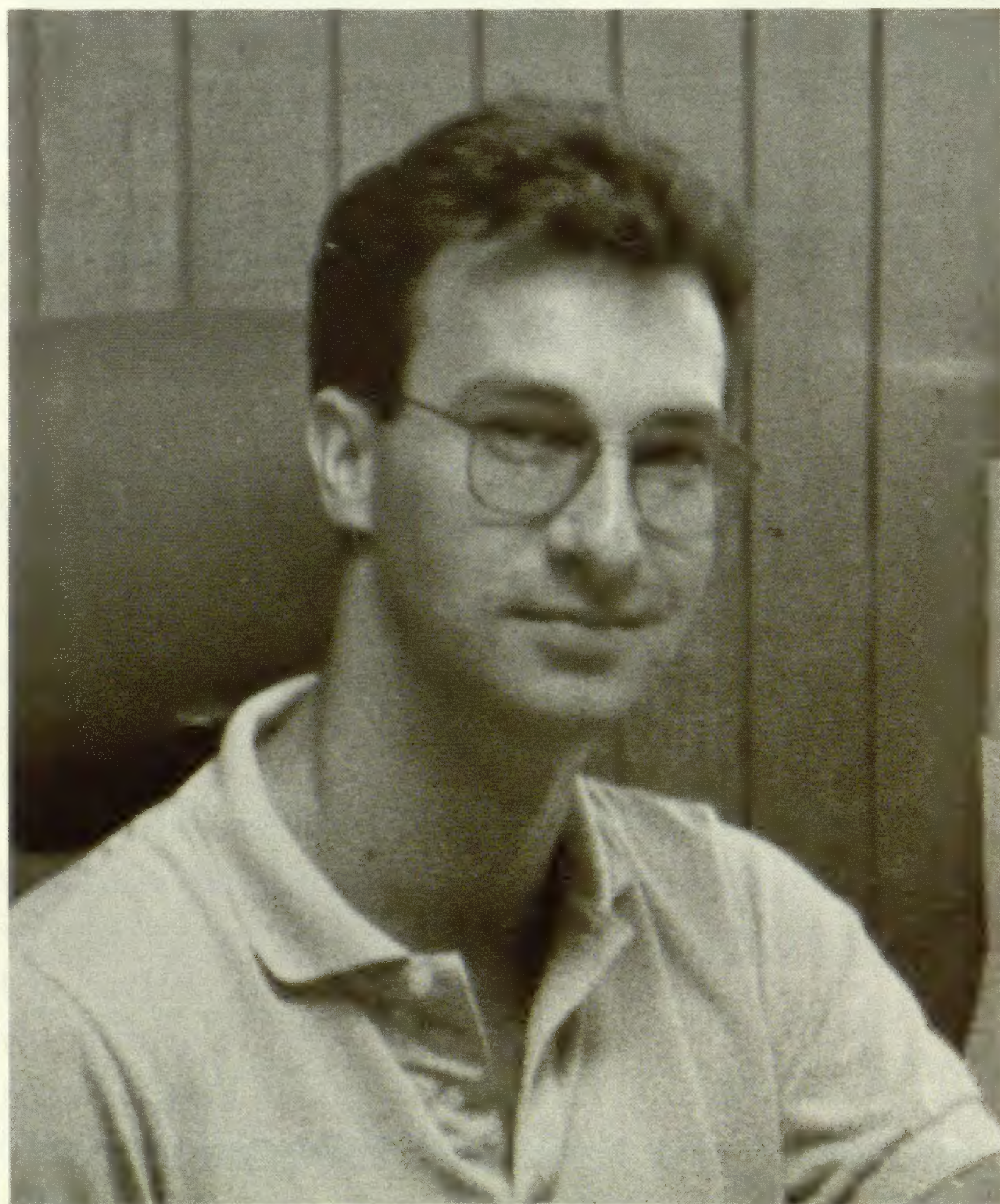
Tim Lindsay named Arboretum Assistant Superintendent

With the energy of Hurricane Hugo but without the destruction, new Assistant Superintendent Tim Lindsay has brought in sweeping changes to the Los Angeles State and County Arboretum's garden.

Originally from Illinois, Tim applied for the Superintendent's position at Descanso Garden and was a top finalist. When Dr. Steven Cohan was chosen for the position, Tim was encouraged to apply for the position that Dr. Cohan left at the Arboretum and was hired. "I'm happy to be here," said Tim. "Besides the botanical side of the garden, I'll get to do design work, implement management procedures and work with a variety of people."

Some of Tim's goals are to develop managerial standards for Arboretum employees, monitor productivity and job satisfaction, and evaluate the plant collection from botanical, horticultural and design aspects. He will also develop written procedures for the gardeners to follow and hold training sessions with the employees on tool and equipment safety.

One of the duties Tim is very excited about is



Tim Lindsay

working with the student interns in the garden. He is in charge of the program and is looking forward to introducing the students to the Arboretum and the various plant collections. "I know each one will have different interests and I want to be able to help them as much as I can," he said.

Before joining the Department, Tim was an assistant professor of horticulture and then the horticulture director and grounds supervisor at Pensacola Junior College in Florida.

After receiving a Bachelor of Science in plant and soil science at Southern Illinois University, he stayed on to earn a Masters of Science degree in forestry.

Tim's love for plants started when he was growing up in a farm community. His grandfather was a professional gardener, and his father was a "big appreciator" of nature. "Since I was always doing something outdoors, I knew I wanted to work with plants."

Last summer he spent five weeks in Europe visiting 45 botanical gardens and arboreta. "The English cottage garden was my favorite, but I also went to study garden design, the administrative part of running a garden and to add more plant knowledge to my repertoire."

Tim's hobbies include scuba diving, hiking, camping, photography and travel. He plans to use his photographic skills to take pictures of the garden and use them for slide presentations and teaching.

He and his wife of seven years live in Sunland where Tim welcomes the change in climate, especially from the humidity of Florida. "I like the Mediterranean environment and the closeness of the ocean and mountains along with the varied culture. Also, each weekend I'm able to visit the different gardens," he said. "Besides, my wife is a jewelry designer and California is a good place for her," he added.

Kiwanians honor Descanso Superintendent

Dr. Steven Cohan, Descanso Gardens Superintendent, completed his very busy first year as a member of the Pasadena East Kiwanis Club with



Dr. Steven Cohan admires the Kiwanian of the Year award presented to him by Pasadena East Kiwanis Club president, Mary Jane Cordon, Associate Dean of Economic Development at Pasadena City College.

a flourish—he was named Kiwanian of the Year by the group.

The award, conferred for outstanding community service and leadership, brought attention to Dr. Cohan's skill in using professional contacts for philanthropic goals. He organized and conducted the club's first plant sale with plants donated by the horticultural industry. The four-hour sale netted about \$4,000, their largest fund raiser yet.

Proceeds benefit the club's two adopted community organizations: the Crippled Childrens Society of Pasadena and Villa Esperanza, a residential care facility for the developmentally handicapped.

Dr. Cohan used his professional expertise on several other projects. He designed and helped organize the installation of an automatic sprinkler system on the playground at Villa Esperanza and assisted with the Special Olympics program.

Besides his duties as the club's second vice-president and co-chairman of the fund raising committee, Dr. Cohan gives his time to activities that bring fun into the lives of the less fortunate. His glib tongue and fast wit have made him a popular master of ceremonies at club functions, and he is a ready volunteer during Crippled Childrens Society outings such as visits to NBC Studios, Dodger Stadium and Bowling Day.

Noted palm collection entrusted to Robinson Gardens

Chamaedorea is a group of about 120 species of small understory palms native in the American tropics from Mexico to Bolivia. Horticulturally, they are among the most important palms and are grown throughout the tropics and subtropics for landscape ornament. In addition, a few of them are extensively grown commercially as indoor plants for use in temperate regions. In fact, the parlor palm or *neanthe bella* is grown by the tens of millions in North America, Europe and the Orient and is the most popular palm for indoor use.

Chamaedoreas, or bamboo palms as they are commonly called, have several attributes giving them their popularity and warranting special merit for Southern California gardens. They have neat, green, bamboolike stems with graceful crowns of leaves that make them excellent specimens for tropical accent. The genus is blessed with amazing diversity and encompasses species having either solitary or clustering stems and simple and bifid or pinnate leaves, or any combination thereof. Being palms of the understory, they are small and tolerant of low light conditions and, in fact, are intolerant of direct sun. Coming mainly from tropical mountain forests, they are remarkably cold tolerant; most withstand the occasional light frost common to coastal areas. As long as they are watered, they are also tolerant of hot, dry conditions. Insects and pests are not particularly attracted to chamaedoreas.

A few, only about a dozen, chamaedoreas have been cultivated in Southern California since before the turn of the century. Unfortunately, the amazing wealth of horticultural diversity and potential in the genus has barely been tapped. Three years ago I began a project concerned with the culture and horticultural taxonomy of this diverse group of palms that holds such great potential for Southern California gardeners. I traveled to Panama, Costa Rica, Guatemala, Belize and Mexico to observe, photograph, and collect chamaedoreas for study and propagation and eventual introduction to cultivation. In addition, I traveled to Florida, Hawaii, and throughout California to view these palms in the landscape and nursery trade.

My efforts have been rewarded with the development of the largest, most important and valuable collection of living chamaedoreas in the



Palms in the Chamaedorea genus display an amazing diversity of forms.

world — about 75 species, all properly identified, named, and documented. All are initially grown in containers in our research facilities at the University of California.

As I wind up my research with each species, I plant them out at the Virginia Robinson Gardens in Beverly Hills, a facility of the Los Angeles County Department of Arboreta and Botanic Gardens. I selected this site as the repository for this important and valuable collection because of its frost-free location, excellent staff and support facilities, and proximity to my workplace. Here the collection is well maintained and continues to serve useful functions. For example, as they grow and develop in the garden, their usefulness as landscape subjects and ease of culture can be evaluated. Some are the only ones of their type in cultivation, and these plants will serve as mother blocks for seed propagation so the species can become well established in the trade. Others are very rare in the wild and with constantly diminishing habitat their existence at the garden serves as a conservation measure to avoid extinction and perpetuate the species.

The chamaedoreas at the Virginia Robinson Gardens constitute a unique, important, and valuable scientific collection that will long serve the horticultural community, gardeners, and nursery trade as a source of information and propagative material for trial and introduction to Southern California gardens.

The author, Donald R. Hodel, is an Environmental Horticulturist with the University of California.

Computers help in tackling

As environmental limitations on land use and development in Southern California increase, more detailed information is being sought to direct the allocation and use of material resources in a more effective and prudent manner. One such area of concern is the expedient use of plants in the urban/suburban landscape, both as ornamentals and as a buffer against seasonal environmental extremes that often prevail in urban areas.

In response to this concern, the research division of the Los Angeles State and County Arboretum has expanded the plant records database to include a broad range of practical information. This data will facilitate designation of plants that should be used in environmentally sensitive areas, or in settings that have special cultural limitations.

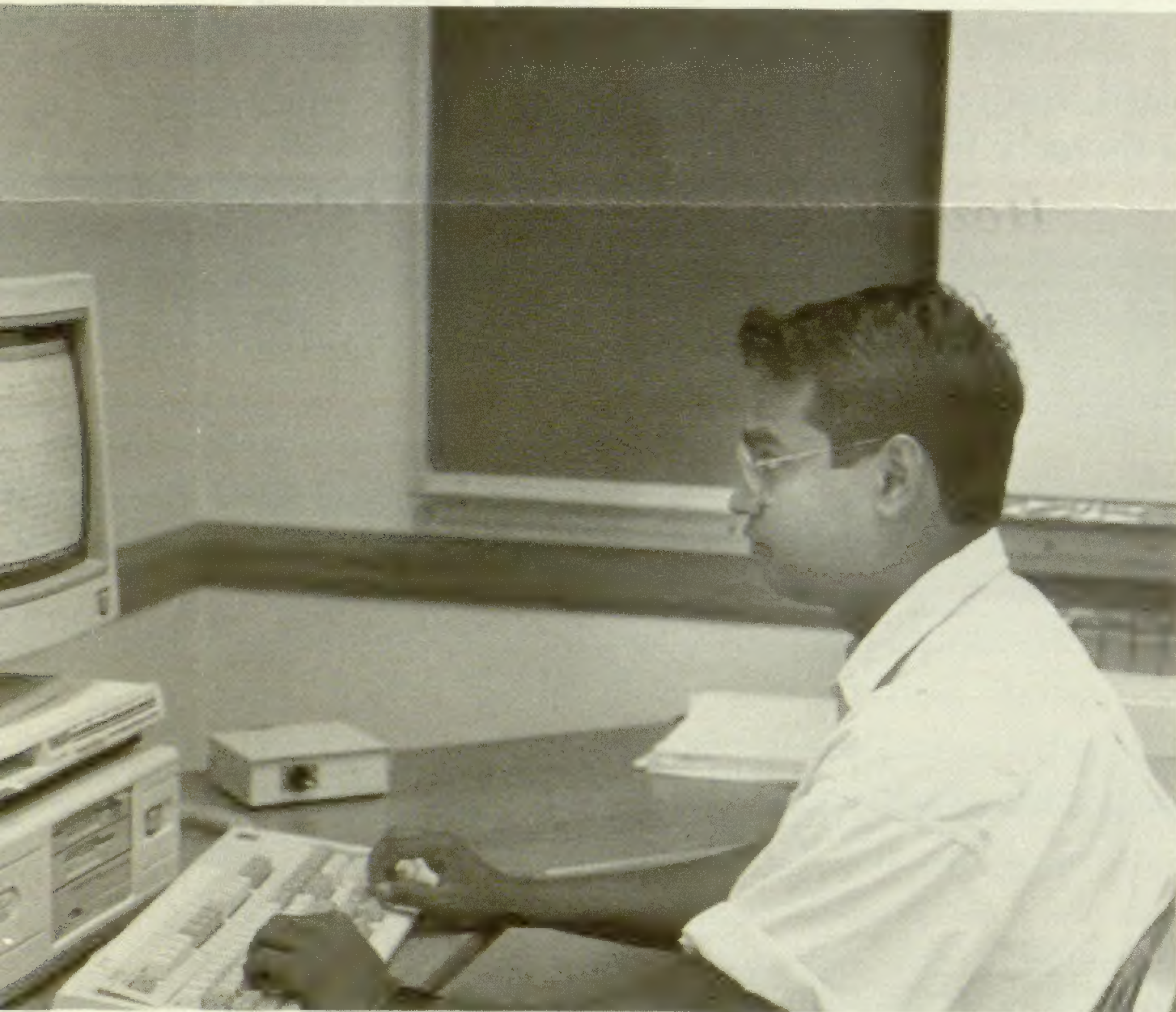
In the past, plant records included only a plant's scientific and common names, its plant

family, its place of origin, the source from which the Arboretum obtained the plant, its propagation history (which may affect its growth and development), and when and where it was planted at the Arboretum. This basic information allows us to keep track of any given plant in the collections but does not provide more than general inferences regarding the plant's limitations, cultural requirements, and optimal uses.

There are many reasons for using landscape plants more carefully. Water conservation is rapidly becoming one of the most pressing environmental issues in Southern California. One of the largest classes of urban water consumption is landscape irrigation. While an astounding diversity of plants from all over the world grows in Southern California, the water requirements of these plants range from thrifty to extravagant. Traditionally, little regard was given to water requirements when choosing plants for a landscape. Now, however, increasing demand on Los Angeles' limited water resources has been aggravated by rapid population growth and four successive years of drought. While the debate continues over bringing more water to the region versus ways to reduce water consumption, an awareness of water conserving plants has nevertheless surfaced among homeowners, municipalities, and the commercial landscape industry.

One aspect of the planting and irrigation issue deals with hillside management. Bare hillsides often erode, which is both unsightly and destabilizing to adjacent installations and natural areas. Under extreme local conditions, unplanted hillsides produce mudslides of potentially devastating proportions. But planted hillsides are still prone to substantial surface runoff, especially on very steep sites, which makes irrigation wasteful. In such situations, the use of drought adapted plants is especially appropriate.

Another environmental concern involves landfills, which present at least two problems that can be partially addressed by changes in popular horticultural practices. One problem is the increasing amount of trash generated in Greater Los Angeles relative to the diminishing amount of available landfill space. As landfills fill up and close, trash must be hauled further at much greater expense. Landfills in what were once



Sam Huda, student worker majoring in computer science, enters data in the Department's expanded plant records database.

environmental problems

outlying areas are now surrounded by new municipalities which balk at expanding landfills in their communities while they add their own refuse to the general waste disposal problem.

Los Angeles County Department of Sanitation estimates that 30 percent of the trash from homes, and 12 percent of commercial refuse, is garden waste. Municipalities and homeowners can reduce garden waste many ways. Replacing lawns with low-growing, drought adapted groundcovers and shrubs eliminates grass clippings in addition to conserving the water needed to keep lawns green during the dry season. More judicious selection of plants for small yards can eliminate the constant pruning and accumulation of brush caused by trying to confine an intrinsically large tree within a small area.

Population pressures, coupled with a scarcity of undeveloped space, is forcing municipalities to use reclaimed landfill sites for open space and new building locations. Subsidence in reclaimed landfills that threaten building foundations and other underground infrastructure is another reason for reducing landscape irrigation. Water increases the rate of subsidence and contributes to leaching of potentially toxic landfill components into the adjacent groundwater supply. The use of water saving plantings therefore becomes a healthy expediency.

Air and water quality is another concern that is being addressed by the Department. More efficient maintenance schedules reduce unnecessary use of gasoline powered equipment and subsequent emissions. Prescheduled short- and long-term maintenance also costs less than emergency maintenance.

Carefully planned planting schedules and cultural practices can reduce the use of herbicides and insecticides, and keep them from leaching into the ground water. Knowing the seasonal cycles of specific weeds and insects enables managers to plan spraying schedules that restrict the use of pesticides. We are now accomplishing significant reduction in herbicide applications by using more mulching materials which we obtain by keeping much of the refuse which previously went to the landfill. Part of this practice also involves timing the application of mulches to coincide with seasonal germination of noxious

weeds. We cut costs by removing specific weeds before they set seeds, reducing the spread of annual weed species that otherwise must be eradicated by hand or with herbicides. Proper disposal of weeds that have set seed can also reduce weed control costs. As such strategies continue to develop, the Department can be a valuable source of information to the public.

Alternatives to insecticides are biological controls, for which the Department can also be an effective disseminator of new information, and tolerance of higher levels of insects on plants. Part of reducing excessive insecticide use is accepting that insects are a part of the biological world and not automatically a threat to our general well-being. The fact is that most plants can thrive while supporting a variety of insect populations. The four county gardens can demonstrate the advantages of maintaining a functional landscape that meets a respectable aesthetic standard instead of insisting on a "picture perfect" landscape.

How well a developed database can help

To focus on plants that have the greatest potential assets but need limited input, the new supplemental database includes specific information about a plant's native habitat. This indicates its performance and cultural requirements in a specific setting. Adding ornamental characteristics to the database also allows the user to apply conventional landscape principles in the selection process. These include continuous bloom or color throughout the year, proper placement of plants according to mature size, and pleasing color combinations. But most importantly, the expanded database facilitates grouping of plants with similar water requirements. Included are both the plant's overall needs and the seasonal rainfall patterns in their place of origin, to which their annual cycle of flowering and vegetative growth often remain linked.

For each of these concerns, spaces called data fields were created in the database to store information that allows us to organize the above criteria - in any priority - to assist in developing a list of recommended plants for a landscape with

specific site characteristics. The fields generated for each plant included maximum height, months during which the plant blooms, its flower color, water requirements, and the season in which the plant receives rain in its native region.

The first test of the applicability of the expanded database will be in the renovation of the African collection at the Los Angeles State and County Arboretum. A comprehensive list of African plants has been developed for this pilot study. Pertinent data were collected combining library research and field experience with the plants. Entered into the computer, the data yielded various report formats that were evaluated for utility. For example, since one of the most pressing priorities of the renovation plan is efficient water use, one format had water requirement as the first basis for grouping with a sub-heading for summer or winter irrigation. Within each subgroup were plants which flower at different times. By mixing plants with different seasons of bloom, we came up with computer

generated groupings of plants, all with the same water requirements that would provide a continuous display of flowers throughout the year. That particular group of plants can subsequently be sorted according to maximum height to determine their proper placement in the landscape. It soon became apparent that we could use additional fields. Some of the plants, for example, had showy ornamental fruits in addition to, or instead of, showy flowers. Some of these plants provide food for birds. Another set of fields could be used to cover foliage color, texture, and duration.

As the amount of information put into the database increases, it will eventually be valuable not only for Arboretum planning, but also to the municipality or homeowner who can, in the future, be given access to this information over the telephone or through a publicly accessible computer display.

Allen Howard is a biologist on the Department of Arboreta and Botanic Gardens research staff.



Bill Fry, grounds maintenance worker, feeds branches into a chipper, reducing them to mulch.

Using this "green waste" in the garden saves landfill space.

Student uses garden for prize-winning research

A research class and the fact that none of her classmates had used the Los Angeles State and County Arboretum before led Janet Loo, a senior at Alhambra High School, to the Rose Garden to test her hypothesis on moisture conserving material.

What started out as a job rejection turned into a five month research project that won Janet many awards and accolades. When she contacted the Arboretum about her work, she was told that she had to be a college student working as an intern. But with the help of Dr. Steve Cohan and hard work, a scientific hunch illustrated another answer to California's drought.

Using four rose bushes and four different planting media, Janet's goal was to see which material maintained constant moisture. She chose four rose bushes along a path without a sprinkler system and in full sun. Roses were chosen because they were growing in ideal soil -- silty, sandy loam with not much clay -- and they're easy to observe.

A 60cm square border was sectioned around each bush. The first bush was the control site, so no moisture conserving material was added to it. A 5cm layer of redwood chips was spread on the soil of the second bush. The third bush had a 5cm layer of redwood compost mixed into the soil. Redwood compost is a mulch made up of wood fibers that swell like a sponge when wet.

The fourth bush had nylon fabric laid around it.

Each bush was watered with five gallons of water every five to six days. Two to five days a week, soil samples of 15cm were air dried overnight and the soil was weighed. The process was continued over five months with all the data recorded.

When compared to the control site, the redwood compost averaged a 36 percent increase in moisture retention while the redwood chips had 11 percent and the nylon fabric had 19 percent moisture retention.

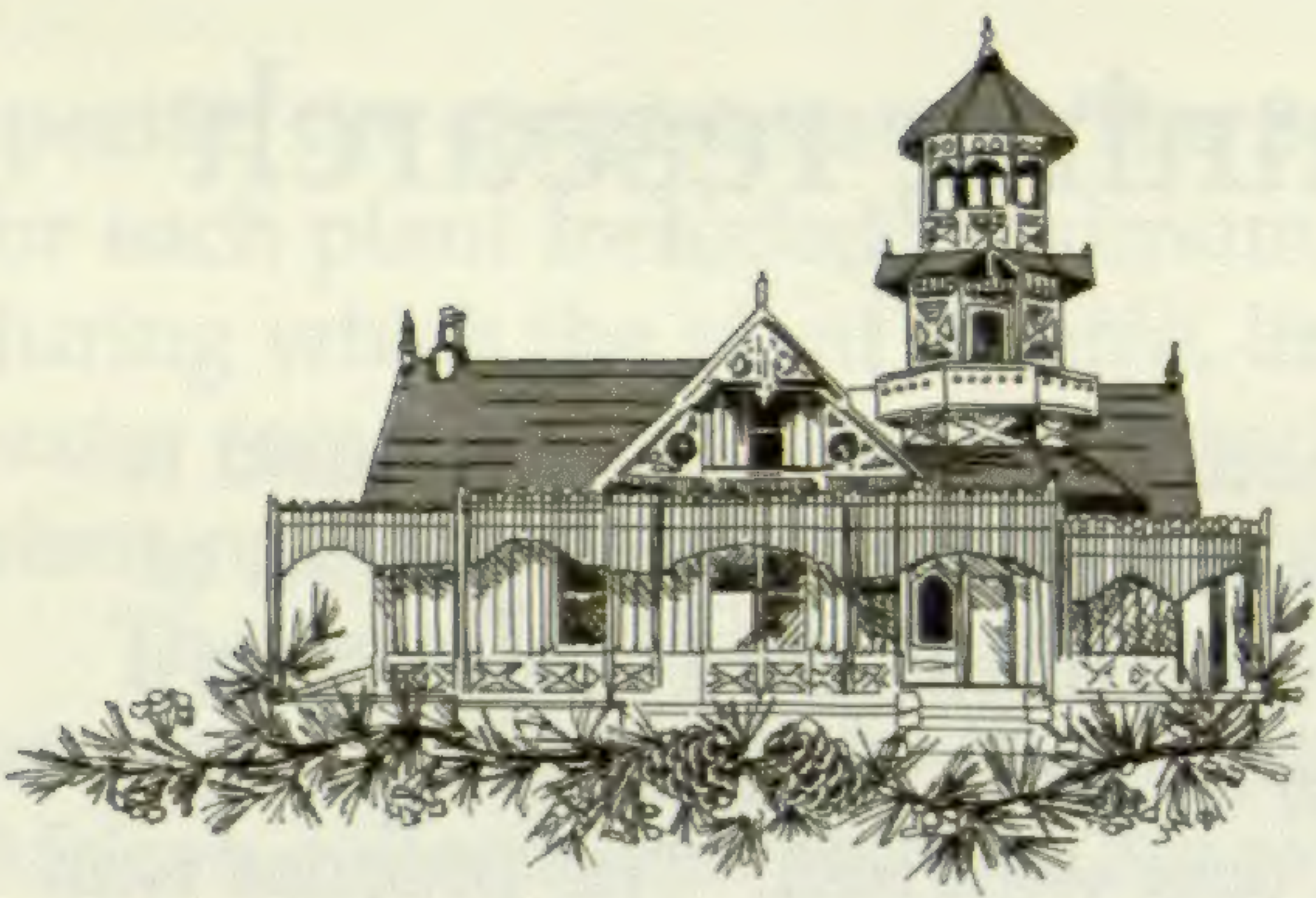
Janet's hypothesis that redwood compost is the best material for moisture retention was proven. She took her exhibit to various fairs and won awards. She won second place in the Alhambra Science and Engineer Fair and an honorable mention in the Los Angeles County Science Fair. From the Department of Water and Power she won \$100 and won a \$50 savings bond from the Army.

"It was fun. I got a lot of attention because of the water conservation crisis," she said. Janet's interest in science started in grade school when she competed in her first fair and won first place.

Science may be her first love but optometry will be her future. She will attend UC Riverside in the fall and major in biology. After graduation, she will attend optometry school and see science in a different way.



Janet Loo, Alhambra High School senior, admires some of the awards she won for a water conservation research project she conducted at the Los Angeles State and County Arboretum.



Gardens Celebrate

"Songs of Christmas" is the theme for the 1990 celebration of the Christmas season at Descanso Gardens. Activities in Van de Kamp Hall and throughout the grounds will take place Dec. 1 - 9. Hours are 10 a.m. to 4 p.m. daily. A special art show and sale in Hospitality House opens Dec. 1 and continues through Dec. 23.



Mother and daughter team, Ele Shaner (left) and Jan Gray and other Descanso Gardens Guild members work 10 months a year producing boutique items for sale during the annual Holiday show.

"The annual Christmas show began in 1958 with members of the Descanso Gardens Guild crafts boutique selling their handmade items as a way to raise money for the Guild", said Gail Boatwright, Guild president. "Now it's grown to encompass artists, sculptors, landscapers, musicians, garden clubs and more. It's a festive way to celebrate the Holiday season."

Shoppers will find a wide array of crafts and handmade goods in Van de Kamp Hall, seasonally decorated with Christmas trees and floral arrangements. All proceeds are used to further the work of the Descanso Gardens Guild in supporting and enhancing the Gardens.

Frequent wreath making demonstrations by George Lewis, former Superintendent of the Gardens, continues during the show. He constructs wreaths in the Della Robbia style and also teaches how to make functional kitchen wreaths containing cooking herbs. In addition, Mr. Lewis creates wreaths of camellia leaves, one of the most famous horticultural features of the Gardens.

Hospitality House, festooned with Christmas decorations and holiday vignettes based on the musical Christmas theme, will provide the setting for the art show and sale which remains open through Dec. 23. More than 100 works of art, including oil and watercolor paintings, sculpture, ceramics and photography will be on exhibit.

Reindeer made from Descanso logs, the Gingerbread House on the main lawn, and photo sessions with Santa enhance the holiday spirit at the Gardens. Visitors can tour the Gardens free of charge on the reindeer bedecked tram. The Live Steamers will provide rides on a scale model diesel train to children and adults visiting the Gardens.

Musicians and musical groups will entertain visitors in the Gardens and Hospitality House, and a special holiday buffet will be available at the Cafe Court. The Gift Shop will be specially stocked with garden-related items suitable for gifts.

the Holidays



The Los Angeles State and County Arboretum is offering a variety of ways to make this Holiday Season a time to remember.

The Gift Shop will open the season Nov. 2, 3 and 4 with sales and workshops. From 9 a.m. to 4:30 p.m. each day shoppers can learn how to shape tabletop topiaries from ivy or fragrant rosemary, plant succulent wreaths and paint straw hats.

For sale will be miniature Christmas trees and vine wreaths decorated with tiny cones and pods gathered in the garden. Sundials, unusual garden books and ceramics are other gifts available for those with hard to shop for persons on their lists.

On Dec. 5 the California Arboretum Foundation will offer a lecture and workshop on Holiday decorating and topiary trees by Rene van Rems, floral designer and owner of Bloomen International. The morning lecture and afternoon workshop are priced separately, or attend both for \$90 (\$75 for CAF members) including lunch. Call the Foundation at (818) 447-8207 for more information or reservations.

The Queen Anne Cottage will be decorated for a Victorian Christmas for the annual open house Dec. 9. One little-known tradition in the late 19th century was saving the Christmas tree, stripped of needles and wrapped in cotton batting, to decorate the next year. To revive the practice, the parlor tree will be a dried agave stalk wrapped in cotton and decorated with peacock ornaments, blown glass birds and replicas of ornaments popular then.

A fresh tree decorated with turn of the century ornaments will hover over Victorian toys in the bedroom.

In the Coach Barn visitors can see a display of antique textiles and demonstrations of farm equipment used in Lucky Baldwin's time.

Guided tours of the Cottage will be offered Dec. 9 from 10 a.m. to 4 p.m. A \$2 fee will further the Historical Preservation Fund goal of painting the Depot and purchasing a small mannequin for displaying the Arboretum's collection of Victorian children's clothing.

Celebration of "An Old Fashioned Holiday in the Gardens" Nov. 17 and 18 opens the season at South Coast Botanic Garden. The Foundation will demonstrate the Christmas spirit by giving free Holiday gifts to the first 100 shoppers to arrive each day beginning at 10 a.m. The sale continues until 4 p.m. both Saturday and Sunday.

Shimmering blue and silver decorations will form a backdrop for the festivities. Local businesses such as the Begonia Farm will decorate a forest of Christmas trees, and a score of garden clubs will mount exhibits featuring their favorite plants.

Shoppers can browse among the craft displays and demonstrations, watching artisans create gifts like those on sale. A harvest cupboard will offer home baked goods, take-home treats to supplement the snacks on sale at the garden. Poinsettias and other plants will be sold.

A kaleidoscope of Holiday music by carolers and other musicians will be punctuated by special programs. At 1 p.m. Saturday a fashion show will feature Holiday attire for everyone in the family. A puppet show Sunday afternoon will thrill youngsters of any age. Free guided tours of the garden will be offered throughout the weekend.

As the Holidays draw closer, emphasis at the gardens shifts to the sounds of Holiday music.

On Dec. 2 the Ellis Orpheus Men's Chorus, accompanied by the Palos Verdes Symphonic Band brass section, will perform Holiday selections. On Dec. 16 the full Palos Verdes Symphonic Band will give a Christmas concert. Admission to the 2 p.m. concerts is included in the garden admission fee.

GARDEN EVENTS

Oct. 13-14 **Orchid Show**
 Sat. 12-4:30 p.m., Sun. 10 a.m.-4:30 p.m.
South Coast Botanic Garden
 On display, hundreds of orchid hybrids and species. Videos & demonstrations on orchid culture. Plants for sale.

Oct. 27-28 **Fall Plant Sale**
 9 a.m. to 4 p.m.
Arboretum
 Hard-to-find plants for fall from seven specialty growers of exotics, natives, bonsai, tillandsias & more

Nov. 3-4 **Chrysanthemum Show**
 9 a.m. to 4:30 p.m.
South Coast Botanic Garden
 Potted plants and Ikebana arrangements showing swaths of fall blooming beauties shaped into cascades, shrubs, tree forms. Plants for sale.

Nov. 17-18 **Flower Design Show**
 Sat. 12-4:30 p.m., Sun. 9-4:30 p.m.
Descanso Gardens
 Top guns of floral artistry show their best as Judges Council of S. Cal. holds biennial display of pedestal, table arrangements.

Dec. 1-2 **Camellia Show**
 Sat. 1-4:30 p.m., Sun. 9 a.m.-4:30 p.m.
Arboretum
 Pacific Camellia Society exhibits 1,000 acid-treated super-blooms. Demonstrations each afternoon.

Jan. 19 **Camellia Workshop**
 8:45 a.m. - 3 p.m.
Descanso Gardens
 Learn camellia grafting, history, culture from experts. \$35 includes materials and lunch. \$5 discount until Jan. 1. Call (818) 796-2551



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